

WHAT IS CLAIMED IS:

1. A method of charging a liquid crystal display (LCD) device, comprising:

providing a plurality of scan lines;

providing a plurality of video lines formed orthogonal to the scan lines;

providing a plurality of cells, each cell including a transistor and a capacitor coupled to the transistor, each of the cells being formed at an intersection of the scan lines and video lines;

providing a periodic signal for writing video data into the LCD device;

charging the plurality of cells having first-type transistors during a first half cycle of the periodic signal until a first voltage level of the periodic signal is reached;

charging the plurality of cells having second-type transistors during a second half cycle of the periodic signal until a second voltage level of the periodic signal is reached; and

discharging the plurality of cells to a predetermined voltage level.

2. The method of claim 1, further comprising providing the periodic signal as a square-wave signal.

3. The method of claim 1, further comprising providing the periodic signal with a first voltage level of approximately 1.5 V.

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4. The method of claim 1, further comprising providing the periodic signal with a second voltage level of approximately 8.9 V.
5. The method of claim 1, further comprising coupling at least one capacitor of the plurality of cells to a common voltage level of approximately 5.2 V.
6. The method of claim 1, where the first-type transistors are p-type transistors.
7. The method of claim 1, wherein the second-type transistors are n-type transistors.
8. The method of claim 6, further comprising providing the periodic signal with a voltage level ranging from approximately 1.5 V to 4.2 V during the first half cycle of the periodic signal.
9. The method of claim 7, further comprising providing the periodic signal with a voltage level ranging from approximately 6.2 V to 8.9 V during the second half cycle of the periodic signal.
10. The method of claim 6, further comprising pre-charging the cells to a common voltage level during the second half cycle of the periodic signal.

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11. The method of claim 6, further comprising pre-charging the cells to a voltage level between a common voltage level and the first voltage level during the second half cycle of the periodic signal.

12. The method of claim 7, further comprising pre-charging the cells to a common voltage level during the first half cycle of the periodic signal.

13. The method of claim 7, further comprising pre-charging the cells to a voltage level between a common voltage level and the first voltage level during the first half cycle of the periodic signal.

14. A method of charging a liquid crystal display (LCD) device, comprising:

providing a plurality of scan lines;

providing a plurality of video lines formed orthogonal to the scan lines;

providing a plurality of cells, each of the cells being formed at an intersection of the scan lines and video lines and including a transistor and a capacitor, one end of the capacitor being coupled to the transistor and another end being coupled to a common voltage level;

providing a signal for writing video data into the LCD device, the signal having a first voltage level and a second voltage level;

providing one of pre-charging the cells during a first half cycle of the signal until the first voltage level of the signal is reached, or pre-charging the

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cell during a second half cycle of the periodic signal until the second voltage level of the periodic signal is reached; and

discharging the cells to a predetermined voltage level.

15. The method of claim 14, wherein the signal is a square-wave signal.

16. The method of claim 14, further comprising providing the signal with a first voltage level of approximately 1.5 V.

17. The method of claim 14, further comprising providing the signal with a second voltage level of approximately 8.9 V.

18. The method of claim 14, further comprising coupling at least one of the capacitors to a common voltage level of approximately 5.2 V.

19. The method of claim 14, wherein at least one of the transistors is an n-type transistor.

20. The method of claim 14, wherein at least one of the transistors is a p-type transistor.

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